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(54) Title: CONJUGATED THIOPHENES HAVING CONDUCTING PROPERTIES AND SYNTHESIS OF SAME

(57) **Abstract:** The present invention relates to conjugated oligomers and polymers comprising aromatic thiophene cores. The conjugated materials are obtained by simple and efficient condensation of an aryl diamine and an aryl dialdehyde or a bifunctional aryl moiety comprising both an aldehyde and an amine. Condensation of the complementary moieties at temperatures ranging from ambient to refluxing temperatures in various solvents resulted in conjugated oligomers and polymers that can subsequently be cast into thin films. Oligomerization and polymerization can be done under mild conditions with removal of the resulting water bi-product responsible for shifting the equilibrium in favour of the conjugated products. The resulting conjugated compounds can be made conducting with dopants affording electrically conducting materials of either p-type or n-type conductors depending on the dopant selected.